REMARKS/ARGUMENTS

The Office Action of October 5, 2007, has been carefully reviewed and these remarks are responsive thereto. Claims 1, 2, 8, 9, 16-19, and 32 have been amended, no claims have been canceled, and no new claims have been added. Claims 1, 2, 8-10, and 16-32 are presently pending in this application. Reconsideration and allowance of the instant application are respectfully requested.

Specification Objection

At page 3 paragraph 10 of the Action, the Office objected to dependent claim 32 as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant has amended dependent claim 32 and respectfully requests that the Examiner withdraw the specification objections.

35 U.S.C. §103 Rejection

At page 7, paragraph 13 of the Office Action, claims 1, 2, 8-10, and 16-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. Pub. No. 2002/0065642 to Swoboda in view of U.S. Pat. No. 6,816,989 to Litt and in further view of U.S. Pat. No. 6,092,127 to Tausheck. Applicant respectfully traverses the rejection for at least the following reasons.

The Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness. According to MPEP §2143, "[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious." Further, MPEP §706.02(j) (*citing Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)) recites:

To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention top be obvious in light of the teachings of the references.

At page 8, paragraphs 1 and 4, the Office alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Litt and Tausheck to Swodoba. However, Applicant respectfully submits that the Office Action has not established a *prima facie* case of obviousness because the cited references, taken alone or in combination, fail to teach or suggest every element recited in independent claims 1, 20, 29, 30, and 31. For example, currently amended independent claim 1 recites, inter alia:

> . . . selecting data of interest from the first sample of state data, wherein the data of interest is a subset of bits of the first sample of state data and includes at least first and second portions separated from each other by at least one bit that is not part of the data of interest;
> determining if residual storage space in a first buffer exists; and
> storing the data of interest from the first sample of state data in said first buffer if it is determined that residual storage space in the first buffer exists, such that the first and second portions of the data of interest as stored are no longer separated from each other by the at least one bit, and otherwise storing said data of interest in a second buffer such that the first and second portions of the data of interest as stored are no longer separated from each other by the at least one bit.
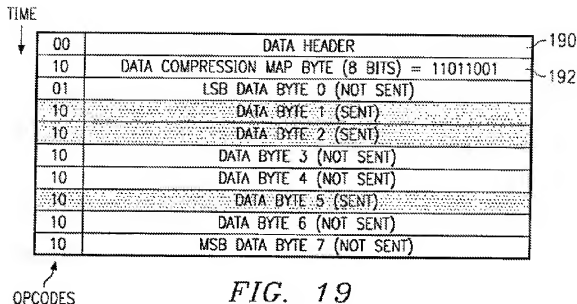
The Office alleges that Swodoba FIG. 19 and paragraph [0121] teach selecting data of interest from the first sample, wherein the data of interest is a subset of bits of the first sample and includes at least first and second portions separated from each other by at least one bit that is not part of the data of interest. Applicant disagrees. For example, Swodoba paragraph [0121] describes a data compression map ". . . wherein a bit value of one indicates that the corresponding new data byte is the same as the previous data byte, and therefore will not be sent, and wherein a bit value of 0 indicates that the corresponding new data byte differs from the corresponding previous data byte, and therefore will be transmitted." Thereafter "[t]he trace packet decoder . . . can easily decode the

data compression map to determine therefrom which bytes are being transmitted and which bytes are

merely duplicated and therefore not transmitted." Further, Swodoba paragraphs [0122]-[00125]

discuss the operation of the data compressor utilizing a sign extension technique, a compression map

technique, or both. However, for each operation, the data compressor compares a new data byte to a

previous data byte to determine whether or not the new data byte is transmitted (e.g., if the new data

byte is the same as the previous data byte, then it is not transmitted). FIG. 14, included below,

illustrates an example of the data compressor. FIGS. 15-18 illustrate further examples.

COMPRESSION EXAMPLE 0	
PREVIOUS DATA	11111111 11111111 11111111 10000011
NEW DATA	11111111 11111111 11111111 10000011
COMPRESSION BIT MAP SENT	NONE BECAUSE ONLY ONE BYTE COMPRESSES
SEND BYTES	DROPPED DROPPED DROPPED SENT
	BYTE #0 IS SENT

FIG. 14

FIGS 14-18 also do not illustrate that the data bytes, whether previously transmitted or currently

transmitted, are separated by at least one bit. More specifically, FIG 19, included below, illustrates

that the data bytes, in this case whether sent or unsent, are not separated by at least one bit.

TIME

00	DATA HEADER	⌐190
10	DATA COMPRESSION MAP BYTE (8 BITS) = 11011001	~192
01	LSB DATA BYTE 0 (NOT SENT)	
10	DATA BYTE 1 (SENT)	
10	DATA BYTE 2 (SENT)	
10	DATA BYTE 3 (NOT SENT)	
10	DATA BYTE 4 (NOT SENT)	
10	DATA BYTE 5 (SENT)	
10	DATA BYTE 6 (NOT SENT)	
10	MSB DATA BYTE 7 (NOT SENT)	

OPCODES   *FIG. 19*

Whether or not the data byte is transmitted based on a comparison to a previously transmitted data

byte in no way teaches that the data bytes (whether currently transmitted or previously transmitted)

are data of interest including at least first and second portions separated from each other by at least

one bit that is not part of the data of interest as recited by previously presented independent claim 1.

 Further, the cited portions of Swodoba refer only to data or data bytes, and fail to disclose that the

data is state data. The Office neither relies on Litt or Tausheck to teach at least these elements nor

do Litt and Tausheck cure the deficiencies of Swodoba. Accordingly, independent claim 1 is

patentable over Swodoba in view of Litt and in further view of Tausheck, either taken alone or in

combination.

  Previously presented independent claim 20 recites, inter alia:

   . . . a first logic selection device configured to receive samples of state data,
to select data of interest from each of the samples of state data, the data of interest
having non-contiguous bits, and to sort the data of interest such that the non-
contiguous bits become contiguous;

For at least the reasons presented with respect to independent claim 1, Applicant asserts that

independent claim 20 is patentable over Swodoba in view of Litt and Tauscheck. Namely, Swodoba in view of Litt and Tauschek, either taken alone or in combination, fails to disclose data of interest having non-contiguous bits, and to sort the data of interest such that the non-contiguous bits become contiguous as recited by independent claim 20. As explained, the cited portions of Swodoba teach only that a data byte is selectively transmitted based on a comparison to a previously transmitted byte. There is no indication that the data bytes, whether previously or currently transmitted, include non-contiguous bits of state data. The Office neither relies on Litt or Taushek to teach at least these elements nor do Litt and Tausheck cure the deficiencies of Swodoba Independent claim 20 is therefore patentable over Swodoba in view of Litt and further in view of Taushek, whether taken alone or in combination.

Original independent claim 29 recites, inter alia:

> . . . determining a trace data fill rate of each of a plurality of trace data chains; and
> determining a schedule for associating a plurality of pins with the plurality of trace data chains to transfer data out of the trace data chains based at least upon the determined trace data chain fill rates.

Independent claims 30 and 31 recite a similar feature. The Office alleges that Litt column 12 lines 8-31 teach determining a schedule for associating a plurality of pins with the plurality of trace data chains to transfer data out of the trace data chains based at least upon the determined trace data chain fill rates as the decision to offload data by the arbitration manager based on the pressure on the trace buffer once it gets full due to a higher fill rate. Applicant respectfully disagrees. Litt does not teach a trace data fill rate as recited by independent claims 29, 30, and 31. For example, Litt column 12 lines 17-20 recite that ". . . the arbitration logic 250 determines which buffer 225a, 225b to accept data based on the status of the important and full bits associated with the data in the downstream slot of each buffer." In doing so, the arbitration logic may determine whether or not a buffer is "under

pressure." Litt column 12 lines 24-28 describe how a buffer may be determined to be under pressure. For example, determining whether or not a buffer is under pressure includes ". . . determining if a particular slot (such as the back slot) is empty, or if any other slots in the buffer are empty, . . . or by receiving the empty signal bit from all or a subset of all of the memory slots." Litt, however, only discloses determining whether or not a buffer is under pressure by determining buffer vacancy at a given moment. Litt does not disclose determining whether or not a buffer is under pressure by determining the rate of change of the buffer vacancy, as claimed. Litt therefore cannot teach a trace data fill rate as recited by independent claims 29, 30, and 31. The Office neither relies on Swodoba or Tausheck to teach at least these elements nor do Swodoba and Tausheck cure the deficiencies of Litt. Accordingly, independent claims 29, 30, and 31 are each patentable over Swodoba in view of Litt and in further view Taushek, either taken individually or in combination.

Dependent claims 2, 8-10, 16-19, 21-28, and 32 are patentable over Swodoba in view of Litt and in further view of Taushek, taken alone or in combination, at least on the basis of their dependency from their respective base claims, and further in view of the additional features recited therein. Applicant does not concede the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims that were not discussed above.

CONCLUSION

All issues having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned. Applicant respectfully requests further examination on the merits of this application.

Respectfully submitted,

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